

REMARKS

The above amendments to the above-captioned application along with the following remarks are being submitted as a full and complete response to the Office Action dated May 29, 2009. This response supersedes all previous responses to the Final Office Action. A Request for Continued Examination (RCE) is being submitted concurrently herewith. In view of the above amendments and the following remarks, the Examiner is respectfully requested to give due reconsideration to this application, to indicate the allowability of the claims, and to pass this case to issue.

Interview Summary

Applicants wish to thank the Examiner for his consideration in conducting an interview with Applicants' undersigned representative on November 30, 2009. During the interview, the Examiner and Applicants' representative discussed proposed claim amendments directed to resolving formality and prior art issues raised in the Advisory Action dated November 18, 2009. The Examiner noted that the proposed claim amendments, if incorporated into all the independent claims, would overcome the current prior art of record, but would require further consideration and/or searching.

Status of the Claims

As outlined above, claims 1-25 stand for consideration in this application, wherein claims 1, 5, 7-9, 12 and 18-20 are being amended to more particularly point out and distinctly claim the subject invention. Any and all amendments to the application are fully supported throughout the disclosure of the invention. Applicants hereby submit that no new matter is being introduced into the application through the submission of this response.

Formality Rejection

Claim 5 was rejected under 35 U.S.C. §112, second paragraph, for being indefinite. As outlined above, claim 5 is being amended in accordance with the Examiner's requirements.

Prior Art Rejections

Claims 1-5, 7-16, and 18-24 were rejected under 35 U.S.C. §103(a) as being unpatentable over Albert et al. (U.S. Pat. No. 6,549,516 B1) in view of Official Notice. Claims 6 and 17 were rejected under 35 U.S.C. §103(a) as being allegedly unpatentable over

Albert in view of Ashok et al. (U.S. Publication No. 2004/0003063 A1). Finally, claim 25 was rejected under 35 U.S.C. §103(a) as being allegedly unpatentable over Albert in view of what was well known in the art at the time the invention was made, and further in view of Ashok. Applicants respectfully traverse the above-outlined rejections for the reasons set forth below.

The present invention as recited in claim 1 is directed to an information processing system in which a plurality of server modules and a storage module, which comprises a storage device for storing a service to be executed by the server modules and a controller for controlling the storage device, are interconnected via a network, wherein the storage module further comprises a system configuration information retention database that stores system configuration information including information about necessary configuration of each server module configured to initiate execution of the service, the number of server modules to which the service is to be assigned, types of services to be executed and server performance, the service including an operating system and an application program; wherein each of the server modules comprises a configuration information transmission unit configured to transmit configuration information about each of the server modules to the storage module at the time of starting each of the server modules; and wherein the storage module is configured to compare the configuration information transmitted by the configuration information transmission units with the system configuration information retained by the system configuration information retention database and give, in accordance with results of comparison, a host name, which is unique to the information processing system, to at least one server module from which the configuration information is transmitted, to assign a service included in the system configuration information to the at least one server module, to transmit data configured to execute the service included in the system configuration information, and to update the number of server modules to which the service is to be assigned.

As recited in claim 7, the present invention is directed to a server module which is connected via a network to a storage module, which comprises a storage device for storing a service to be executed by the server module and a controller for controlling the storage device, the server module comprising: a configuration information transmission unit configured to transmit configuration information about the server module to the storage module when the server module starts up, the configuration information including performance and resource information of the server module; a reception unit configured to receive data designed to execute a service by the server module and a host name unique to an information processing

system which includes the server module, both the data and the host name being transmitted from the storage module; and a service start unit configured to start the service in accordance with the received data, the service including an operating system and an application program.

The present invention as recited in claim 8 is directed to a storage module which is connected to a plurality of server modules via a network and equipped with a storage device for storing a service to be executed by the server modules and a controller for controlling the storage device, the storage module comprising: a system configuration information retention unit that stores system configuration information including information about necessary configuration of each server module designed to execute the service, the number of server modules to which the service is to be assigned, types of services to be executed and server performance, the service including an operating system and an application program, wherein each of the server modules comprises a configuration information transmission unit configured to transmit configuration information about each of the server modules to the storage module at the time of starting each of the server modules; and wherein the storage module further comprises a comparison unit configured to compare configuration information about the server modules, which is transmitted by the server modules, and the system configuration information retained by the system configuration information retention unit and give, in accordance with results of comparison made by the comparison means, a host name, which is unique to the information processing system, to at least one server module from which the configuration information is transmitted, to assign a service included in the system configuration information to the at least one server module, to transmit data designed to execute the service included in the system configuration information, and to update the number of server modules to which the service is to be assigned.

As recited in claim 9, the present invention is directed to a system construction method for use in an information processing system in which a plurality of server modules and a storage module, which comprises a storage device for storing a service to be executed by the server modules and a controller for controlling the storage device, are interconnected via a network, the method comprising the steps of: with each of the server modules, transmitting configuration information about each of the server modules to the storage module at the time of starting each of the server modules, the configuration information including performance and resource information of each server module; and, with the storage module, comparing configuration information transmitted from the server modules with system configuration information including information about types of services to be executed, server performance, necessary configuration of each server module for execution

of the service and the number of server modules to which the service is to be assigned[[: and]], giving, in accordance with results of the comparison, a host name, which is unique to the information processing system, to at least one server module from which the configuration information is transmitted, assigning a service included in the system configuration information to the at least one server module, transmitting data to execute the service included in the system configuration information, and updating the number of server modules to which the service is to be assigned, the service including an operating system and an application program.

Further, as recited in claim 12, the present invention is directed to an information processing system in which a plurality of server modules and a storage module, which comprises a storage device for storing a service to be executed by the server modules and a controller for controlling the storage device, are interconnected via a network, wherein the storage module further comprises a system configuration information retention unit that stores system configuration information including information about types of services to be executed, server performance, necessary configuration conditions for each server module for execution of the service and the number of server modules operating the service; and a configuration condition request transmission configured to transmit to the server modules, at startup of the server modules, a configuration condition request including a request designed to initiate necessary configuration of each of the server modules for the execution of the service, the service including an operating system and an application program wherein each of the server modules comprises a comparison configured to compare a configuration of each server module with each server module configuration required for execution of the service, which is transmitted to each server module; and a response unit configured to transmit response information, which indicates whether requirements specified by the configuration condition request are met, to the storage module in accordance with results of the comparison made by the comparison routine, and wherein the storage module gives, in accordance with the response information, a host name, which is unique to the information processing system, to at least one server module from which the response information is transmitted, assigns a service included in the system configuration information to the at least one server module, transmits data designed to execute the service included in the system configuration information, and updates the number of server modules to which the service is to be assigned.

Even more, the present invention as recited in claim 18 embodies a server module that is connected via a network to a storage module, which comprises a storage device for storing a service to be executed by a server module and a controller for controlling the storage device,

the server module comprising: a startup notification unit configured to notify the storage module of server module startup; a reception unit configured to receive, from the storage module, a configuration condition request including a request for configuration of the server module that is transmitted at startup of the server module and necessary for the execution of the service for the server module, the service including an operating system and an application program; a comparison unit configured to compare the configuration of the server module with a server module configuration required for the execution of the service, which is transmitted to the server module, the configuration of the server module including performance and resource information of the server module; a response unit configured to transmit response information, which indicates whether requirements specified by the configuration condition request are met, to the storage module in accordance with a result of comparison made by the comparison unit; a reception unit configured to receive data designed to execute the service by the server module and a host name unique to the information processing system, both the data and the host name being transmitted from the storage module; and a service start unit configured to start the service in accordance with the received data.

Even further, the present invention as recited in claim 19 embodies a storage module which is connected to a plurality of server modules via a network and equipped with a storage device for storing a service to be executed by the server modules and a controller for controlling the storage device, the storage module comprising: a system configuration information retention unit that stores system configuration information including information about types of services to be executed, server performance, server module configuration conditions required for execution of the service and the number of server modules operating the service, the service including an operating system and an application program; and a configuration condition request transmission unit configured to transmit, at the time of starting each of the server modules, a configuration condition request including a request for server module configuration designed to execute the service for each of the server modules, wherein the storage module provides, in accordance with response information that is transmitted from the server modules to indicate whether requirements specified by the configuration condition request are met, a host name, which is unique to the information processing system, to a server module transmitting response information which indicates the requirements specified by the configuration condition request are met, assigns a service included in the system configuration information to the server module transmitting the response information which indicates the requirements specified by the configuration

condition request are met, transmits data designed to execute the service included in the system configuration information, and updates the number of server modules to which the service is to be assigned.

Finally, the present invention as recited in claim 20 is directed to a method for use in an information processing system in which a plurality of server modules and a storage module, which comprises a storage device for storing a service to be executed by the server modules and a controller for controlling the storage device, are interconnected via a network, the method comprising: sending a notification from the server modules to notify the storage module of server module startup; transmitting from the storage module at the server module startup a configuration condition request including a request for server module configuration required for the execution of the service to the server modules, the service including an operating system and an application program; comparing in the server modules the configuration of each server module with the server module configuration designed to execute each service for the server module, and transmitting, in accordance with results of the comparison, to the storage module response information indicating whether requirements specified by the configuration condition request are met; and providing from the storage module, in accordance with the response information, a host name, which is unique to the information processing system, to a server module transmitting response information which indicates the requirements specified by the configuration condition request are met is transmitted, assigning a service included in system configuration information from the storage module to the server module transmitting the response information which indicates the requirements specified by the configuration condition request are met, the system configuration information including information on types of services to be executed, server performance and a number of servers required for each type of service, transmitting data for executing the service, and updating the number of server modules to which the service is to be assigned.

Among its main features, the present invention relates to an information processing system that comprises a plurality of server modules and a storage module. The storage module has a storage device, in which operating systems and application programs to be executed by the server modules and/or data which is used for execution of the operating systems and/or application programs are stored. The storage module also has system configuration information on services required for configure the information processing system. The system configuration information includes information on type of services to be

executed and information on server performance and number of servers required to each services (see for example Figure 6 and its corresponding narrative).

Each server module, at a time of power-on or reset, sends configuration information including information on its performance and on resources installed thereto to the storage module. The storage module, in response to the configuration information, selects a service (an operating system and an application program), assigns it to the server that has sent the configuration information, and sends it to the server. Then, each server module starts up the service (the operating system and the application program) sent from the storage module.

According to the above features, a system administrator, for instance, can easily configure an information processing system without paying attention to the performance characteristics of server modules that constitute the information system.

In contrast to the present invention, Albert merely discloses a system and method for forwarding packets between a network and servers. In Albert, forwarding agents and service managers are provided between a network and a group of servers. The service managers send specific instructions to each of the forwarding agents to processing flows of packets.

Applicants will contend that Albert does not disclose or suggest the above-described features of the present invention. Specifically, the Examiner pointed out that Albert discloses a storage module that comprises a system configuration information retention database at col. 13, lines 16-18. However, the fixed affinity database disclosed in Albert is in fact completely different from system configuration information retention database of the present invention. In the fixed affinity database of Albert, fixed affinities that include actions are stored. That is, information stored in the fixed affinity database indicates how flows of packets between clients and servers are handled.

On the other hand, the system configuration information retention database of the present invention stores system configuration information that is information on services required for configuring the information processing system. The system configuration information includes information on the type of services to be executed and information on server performance and the number of servers required for each service. Such features are not taught by Albert at all.

Further, Albert fails to teach or suggest that the storage stores services, that is operating systems and application programs, to be executed by the server modules, and assigns them to the servers in accordance with a result of comparison between system configuration information and configuration information sent by the servers, wherein the configuration information sent by the servers including performance and resource

information of the servers. Therefore, the description in column 13, lines 16-21 of Albert fails to show or suggest any structure or operation with any level of specificity of a storage module in accordance with the present invention.

Even more, Albert fails to show or suggest servers or server modules, each of which has a configuration transmission unit that transmits configuration information about its own server modules, as in the present invention. Contrary to the Examiners citation of Fig. 2A, items 220-223 and column 6, lines 56-58 of Albert, Albert only mentions communication between servers 220-223 and other items and does not mention the contents of packets transmitted from servers 220-230. Thus, again the description cited by the Examiner fails to show or suggest any structure or operation with any level of specificity of a server module in accordance with the present invention.

Applicant will contend that Albert by itself fails to show or suggest any structure or operation that can render the present invention as claimed obvious to one of skill in the art. To the extent that the Examiner relies on Official Notice to support any rejection, Applicants hereby contend that Albert, even in view of Official Notice, still fails to show or suggest every feature of the claimed invention. The present invention as claimed is distinguishable and thereby non-obvious over Albert.

The secondary reference of Ashok merely discloses a computer system having logical partitions in which physical resources are dynamically allocated to the logical partitions. Ashok only relates to features that are recited in the dependent claims, and thus fails to provide any teaching or suggestion that makes up for the deficiencies in Albert. Even if these references were combined, such a combination would still fail to show or suggest all the features of the claimed invention as discussed above. Consequently, the claimed invention is distinguishable and thereby non-obvious in view of Albert and Ashok.

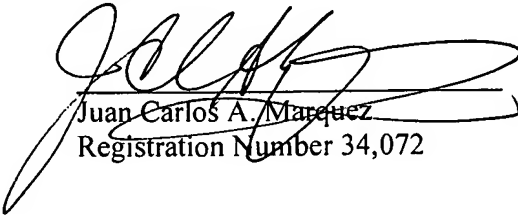
All in all, the present invention as claimed is allowable over the prior art of record as discussed above.

Conclusion

In view of all the above, Applicant respectfully submits that certain clear and distinct differences as discussed exist between the present invention as now claimed and the prior art references upon which the rejections in the Office Action rely. These differences are more than sufficient that the present invention as now claimed would not have been anticipated nor rendered obvious given the prior art. Rather, the present invention as a whole is distinguishable, and thereby allowable over the prior art.

Favorable reconsideration of this application as amended is respectfully solicited. Should there be any outstanding issues requiring discussion that would further the prosecution and allowance of the above-captioned application, the Examiner is invited to contact the Applicant's undersigned representative at the address and phone number indicated below.

Respectfully submitted,



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